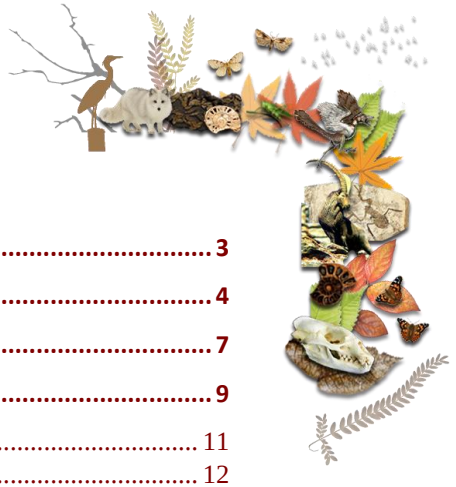
Natural History & Environmental Cultural Heritage in
European Digital Libraries for Education

Natural Europe Pathway Authoring Tool Manual

Project co-funded by the European Commission within the ICT Policy Support Programme



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1 Introduction

'Place museum visitors in the centre of an exhibition that is both physical & virtual using technology, services and learning content to provide personalized, appealing educational experiences; changing the way museum education is perceived and conducted, worldwide.'

Natural Europe project vision

Bringing the museum to your classroom...

Educational activities outside the classroom have a great potential of engaging students in practical activities that allow experimentation and help consolidating the theoretical background presented in the classroom. When these activities take place in settings such as museums, places of discovery and wonder, learners can build their knowledge while playing and exchanging social and scientific information.

In order to make the most of it, a museum visit (either physical or virtual) needs to be carefully planned and prepared by the teacher or the museum educator. To support teachers in their effort, we came up with the **Natural Europe Educational Pathway**, a framework that integrates the pedagogical requirements of a learning activity taking place outside the classroom. Although typically the pathway revolves around a visit to the museum, the learning experience needs to be embedded in a context that allows the preparation of the learner before the visit and exploits through follow-up up activities the visit's learning outcomes. To address these requirements, the Natural Europe Educational Pathway consisting of three (3) main phases: the *Pre-Visit phase, the Visit*

phase and *the Post-Visit phase.* Each of the three phases includes one or more Teaching steps guiding the implementation of the teaching activities (i.e. Question Eliciting Activities, Active Investigation, Creation, Discussion and Reflection).

The aim of this Manual is to introduce the **Natural Europe Pathway Authoring Tool** and guide teachers and museum educators through the design of such online Educational Pathways by providing a step by step design tutorial.

The Natural Europe Authoring Tool is a database of educational pathways, where educators can **create** their own pathway and **share** them with the community, while **making use of a large collection** digital resources from **Natural History Museums** and collections such as **Europeana**[1]**,** a European-wide cultural heritage digital library. Learners can use the Tool to **follow educational pathways** and **play with digital resources**.

For more information on the concept of Educational Pathway and the learning theories behind it, the **Natural Europe Educational Pathway Handbook** complementing this Manual is available online at http://wiki.agroknow.gr/agroknow/index.php/Resources. The Handbook also discusses the potential of museums to foster learning and guides teachers and educators through the design of learning activities that allow them to make the leap between classroom and museum.

The present document was created in the context of the **Natural Europe**[2] **project (NE)**, a European funded project which aims to: a) facilitate the search and retrieval of digital library objects related to Natural History, Environmental Education, and Biological Sciences; b) provide educators with the necessary software tools to design innovative online pathways using digital collections of Natural History Museums; c) encourage visitors to follow educational pathways and exploit high quality digital content available in Natural History Museums.

[1] http://www.europeana.eu/portal/
[2] http://www.natural-europe.eu/

2 Natural Europe Educational Pathway Authoring Tool

In order to help educators design innovative Educational Pathways, an online software tool that guides them through each step of the pathway design is developed in the context of Natural Europe project. The Natural Europe Authoring Tool is a database of educational pathways and digital resources.

The resources hosted by the software tool can easily be **searched**, **retrieved** and **integrated** into your pathway, but there is also the option to **upload** and **store** your own resources. More than being just an authoring tool for teachers and educators, the software allows visitors to **follow educational pathways** and **play with digital resources** belonging to various museums. Students and learners can directly receive guidelines and complete educational pathways prepared by educators.

The following section includes a brief overview of the Natural Europe Pathway Authoring Tool. In order to access the tool, **open a browser window** and **type the following address**:

http://education.natural-europe.eu

Figure 2.1 represents the **Main page** of the Natural Europe Pathway Authoring Tool. On this page the visitor can **browse** through the listed pathways of the Pathway Repository and **access** them by selecting the GO NOW! button.

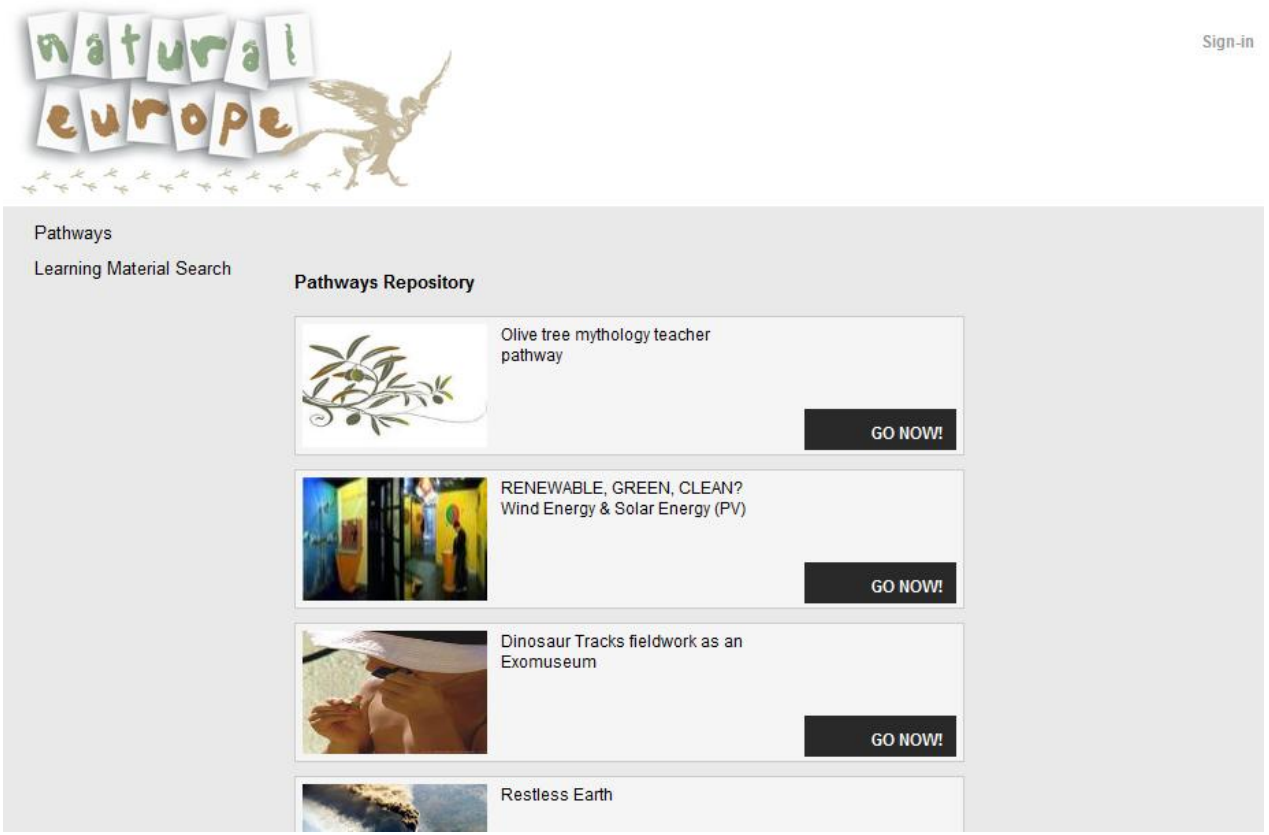

Figure 2.1: Main Page of NE Authoring tool

2.1 Sign in

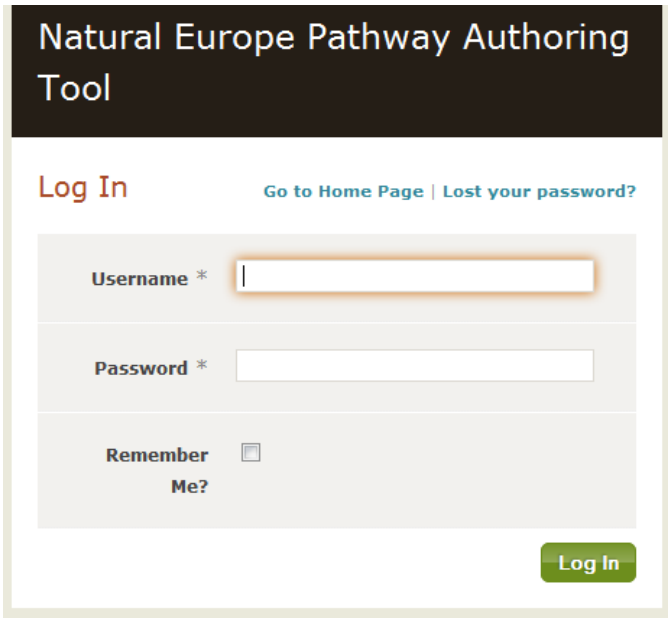

Figure 2.2: Log in

To **have access to more functionalities** including creating your own pathway and uploading resources, **Sign in is required**.

Select the Sign-in button located on the top right corner of your screen and complete the required fields by providing your **Username** and **Password**.

2.2 Dashboard

Once you have logged in, the **Dashboard** of the Pathway Authoring Tool provides you with an overview of what is available on the site.

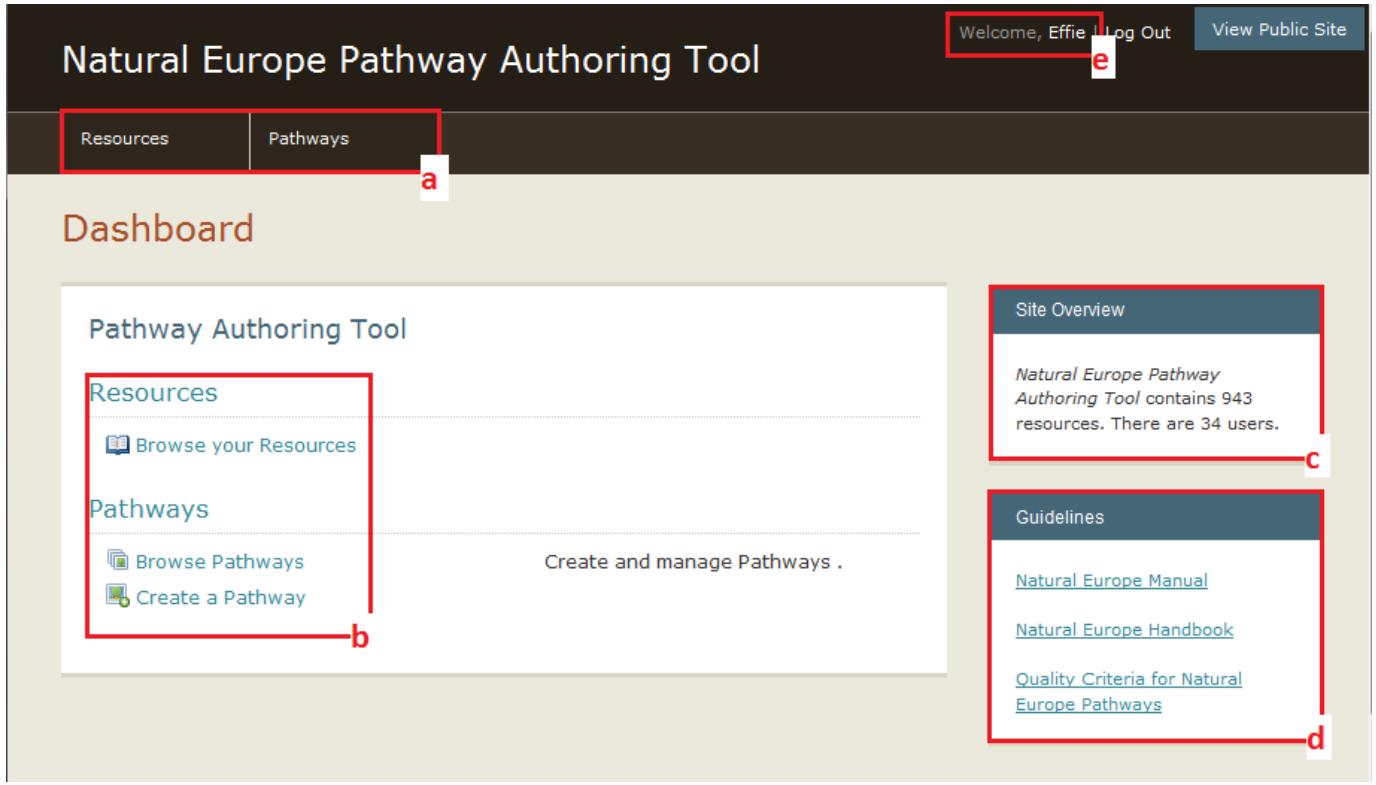

Figure 2.3: Dashboard

The main toolbar consists of two sections: **Resources and Pathways** (Figure 2.3 – area "a").

You can either access Resources and Pathway sections from the toolbar or from the links provided right below the toolbar: **Browse your resources,** or **Browse/ Create a pathway** (Figure 2.3 – area "b")**.**

On the right column of the Dashboard you can check the **Site Overview** (number of items and users of the site) (Figure 2.3 – area "c"), **Get online help** (Manual, Handbook, Quality Criteria) (Figure 2.3 – area "d")

If you want to edit your personal information you have to click on the top right corner (near log-out) your name (Figure 2.3 – area “e”) and then system provides a form where you can change your information (name, email, username, password) (Figure 2.4).

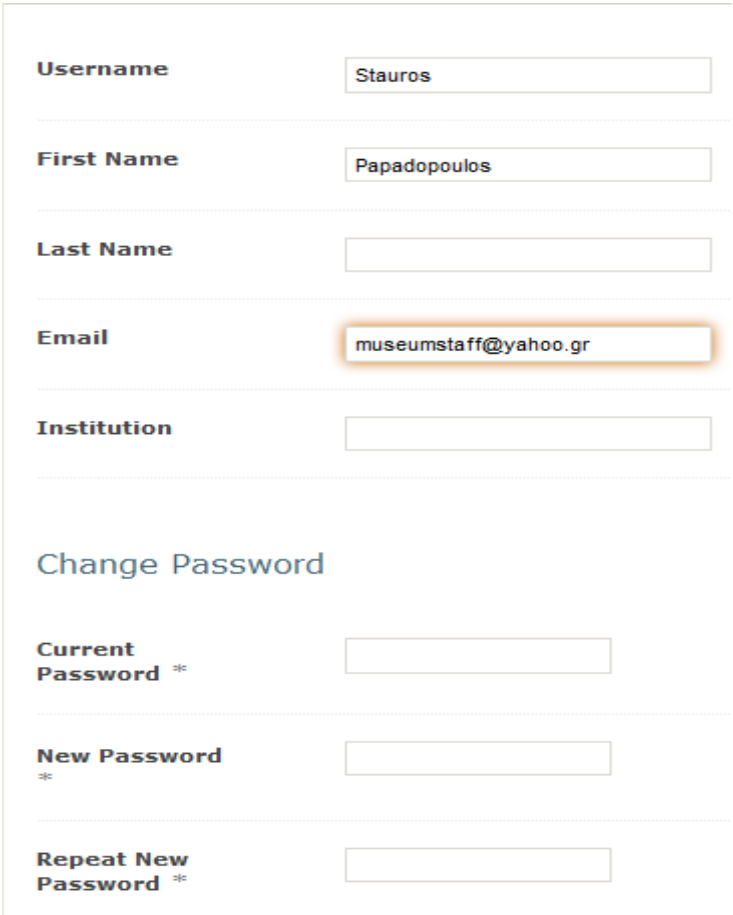

Figure 2.4: Personal Account

2.3 Resources

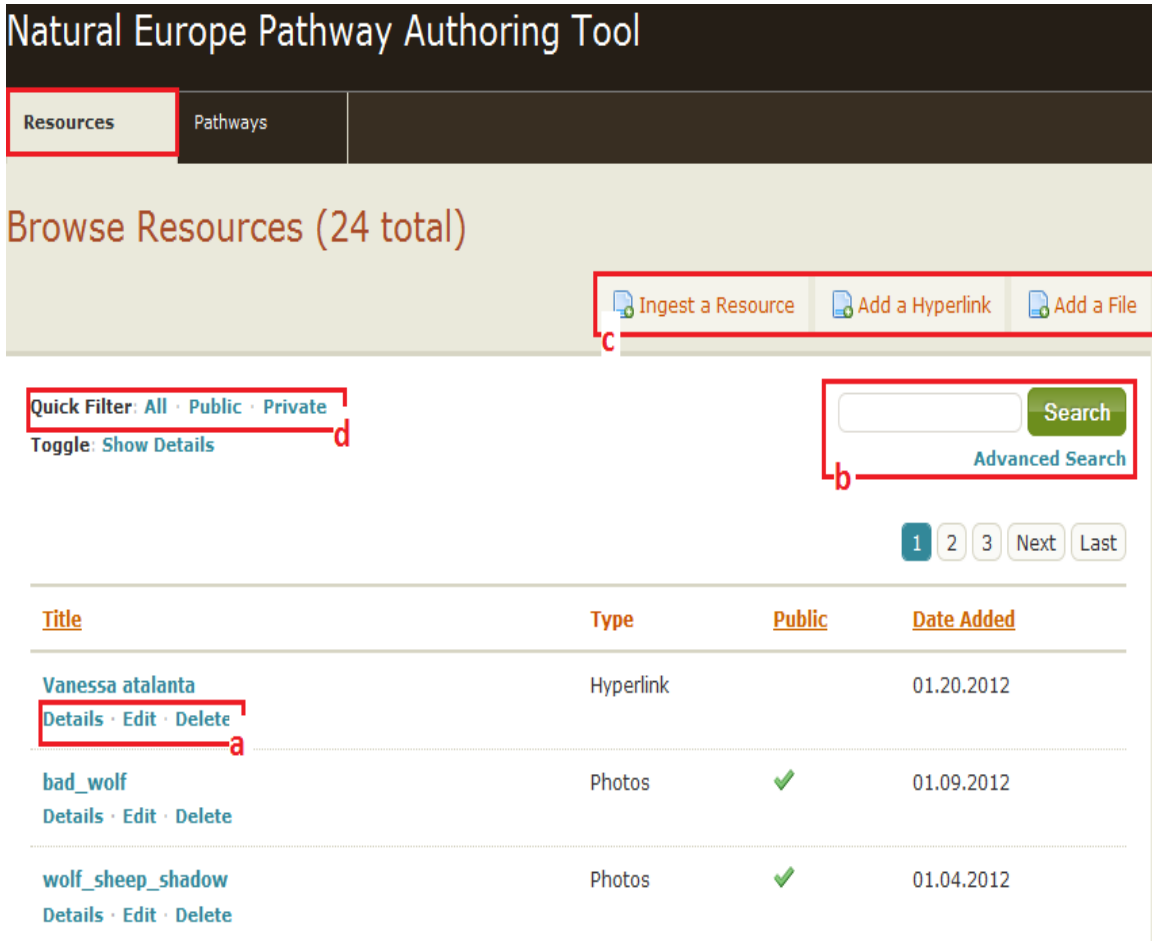

Figure 2.5: Resources Management

The **Resources** area consists of **Resources Management** options such as **Basic** and **Advanced Search** (Figure 2.5 - area "b") with additional parameters such as *Type, Range, Keyword.* Also you can **filter** you results (Figure 2.5 – area "d") with additional parameters such as *Public/Private Resources* etc.

Users can view the resource's **thumbnail/image preview** (Figure 2.5 – area "a")

Figure 2.6: Thumbnail/image preview

2.3.1 Add a Resource

You can **Add a Resource** (Figure 2.5 – area "c") into your repository by three ways.

1. You can **add a file** from your personal resources (ex. from your local disc)

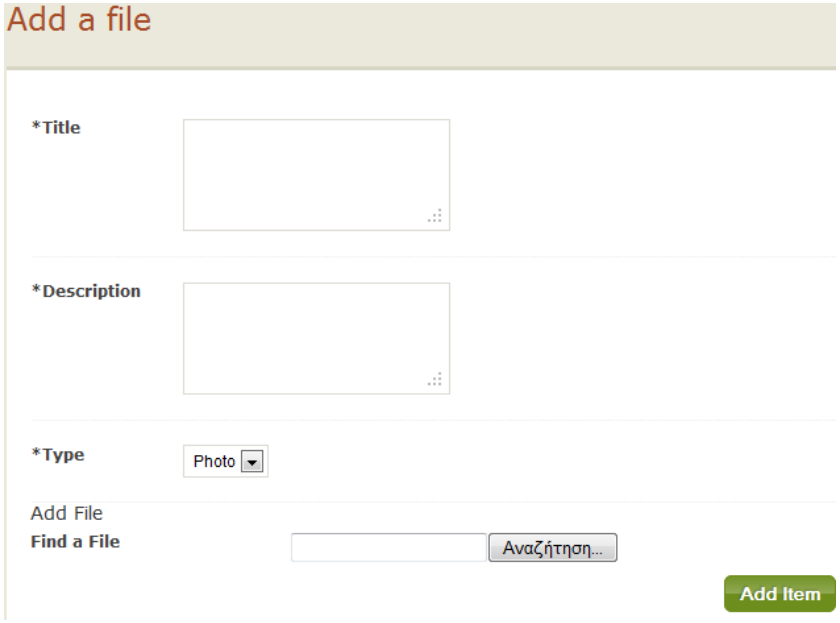

Figure 2.7: Add a file

2. **Add a hyperlink:** you can enter a URL that links to another website/source

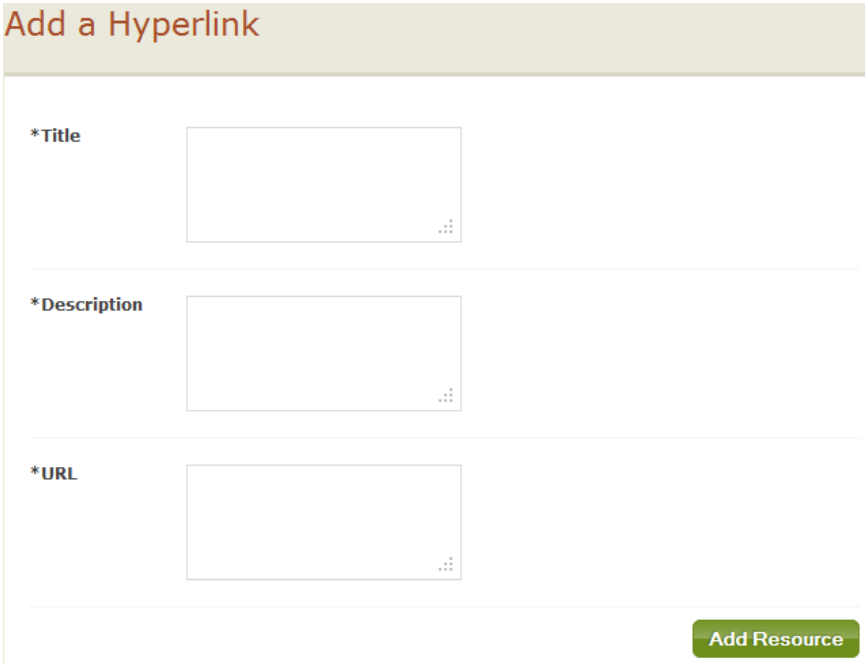

Figure 2.8: Add hyperlink

3. **Ingest a resource** by searching within 3 repositories (Figure 2.9 – area "a"):
    a. ARIADNE (http://www.ariadne-eu.org/),
    b. Europeana
    c. Natural Europe Cultural Collections

In the "**Ingest a Resource**" option you can search for an item though the available repositories. After you decide on the ones that interests you, then click the "**Add it to my repository**" button (Figure 2.5 – area "b"). After adding the resource in your *Resources* then you can add some extra metadata.

Moreover, you have the option to **filter** the results according to the following parameters: *image*, *text*, *sound* or *video* (Figure 2.5 – area "c")

Please mind that all the resources uploaded ***are not*** "Public" by default. If you would like to use a resource in your pathway, and therefore be visible to others, then you have to make this resource **public**.

Please mind that if a resource has been is already uploaded on the Multimedia Authoring Tool, then it can be found in the Natural Europe Cultural Collections and be add to your „Resources" collection following the „Ingest a Resource" procedure. You can search the resource by entering its title or keywords in the „search" option (Figure 2.9).

Figure 2.9: Ingest a Resource

The procedure is:

a. Click on the tab "**Ingest a Resource**" (Figure 2.5 – area "c"). Then the system provides a "**search box**" where you can search within the 3 repositories of Natural Europe Federation (ARIADNE, Europeana and Natural Europe Cultural Collections) (Figure 2.9 – area "a") by entering a keyword.

Figure 2.10: Search box to ingest a resource

b. System searches through the 3 repositories and then returns the **results**

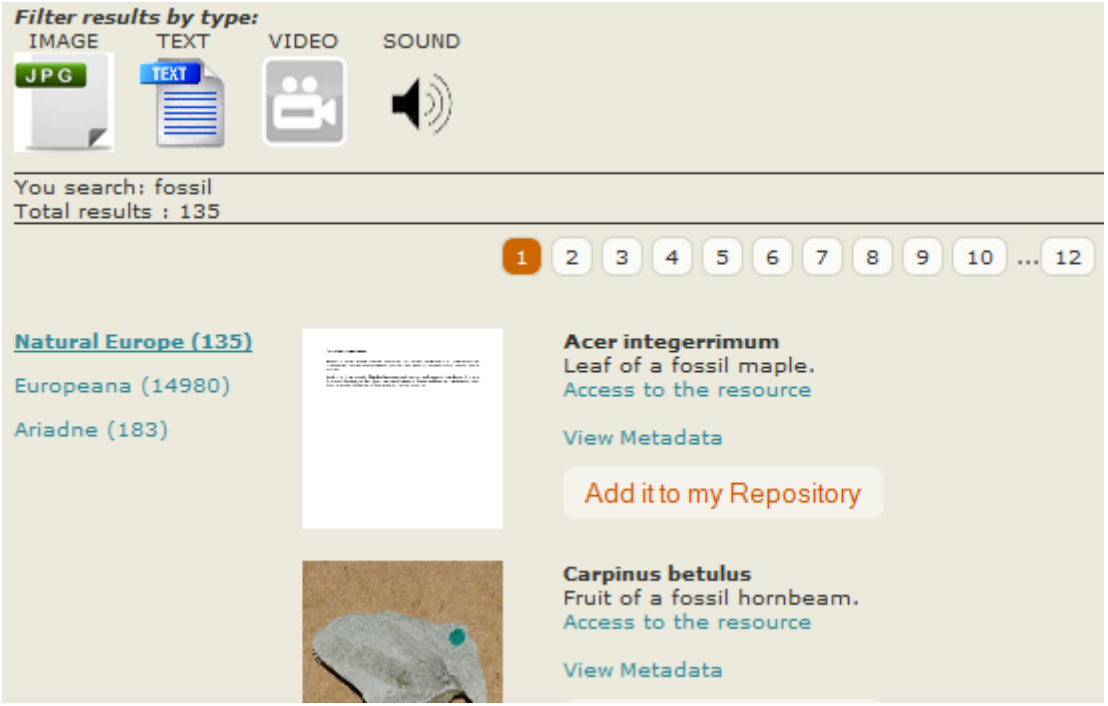

Figure 2.11: Results to ingest a Resource

c. Click on the tab "**Add it to my Repository**" in order to insert an item into your collection, where you can enrich it with educational metadata.

Figure 2.12: Add it to my Repository

2.3.2 Edit a Resource

You can edit a resource

1. By clicking the *edit* button on **Browse Resource** page (Figure 2.5 – area “a”), or short after you *add the resource* into your repository, with any of the three aforementioned ways, the system will redirect you to the form where you can edit the metadata of the resource.
2. In the **Edit a Resource** page you can select from the left sub-menu (Figure 2.13 – area “a”) the **type of metadata** you would like to configure
3. Then you can **change the element** of your choice (Title, Description)
4. You can make the Resource “**public**” or you can “**Delete**” it if you want (Figure 2.13 – area “b”)
5. Finally, if you want to save the changes that you made to the resource you just have to click the button “**Save Changes**” (Figure 2.13 – area “c”)

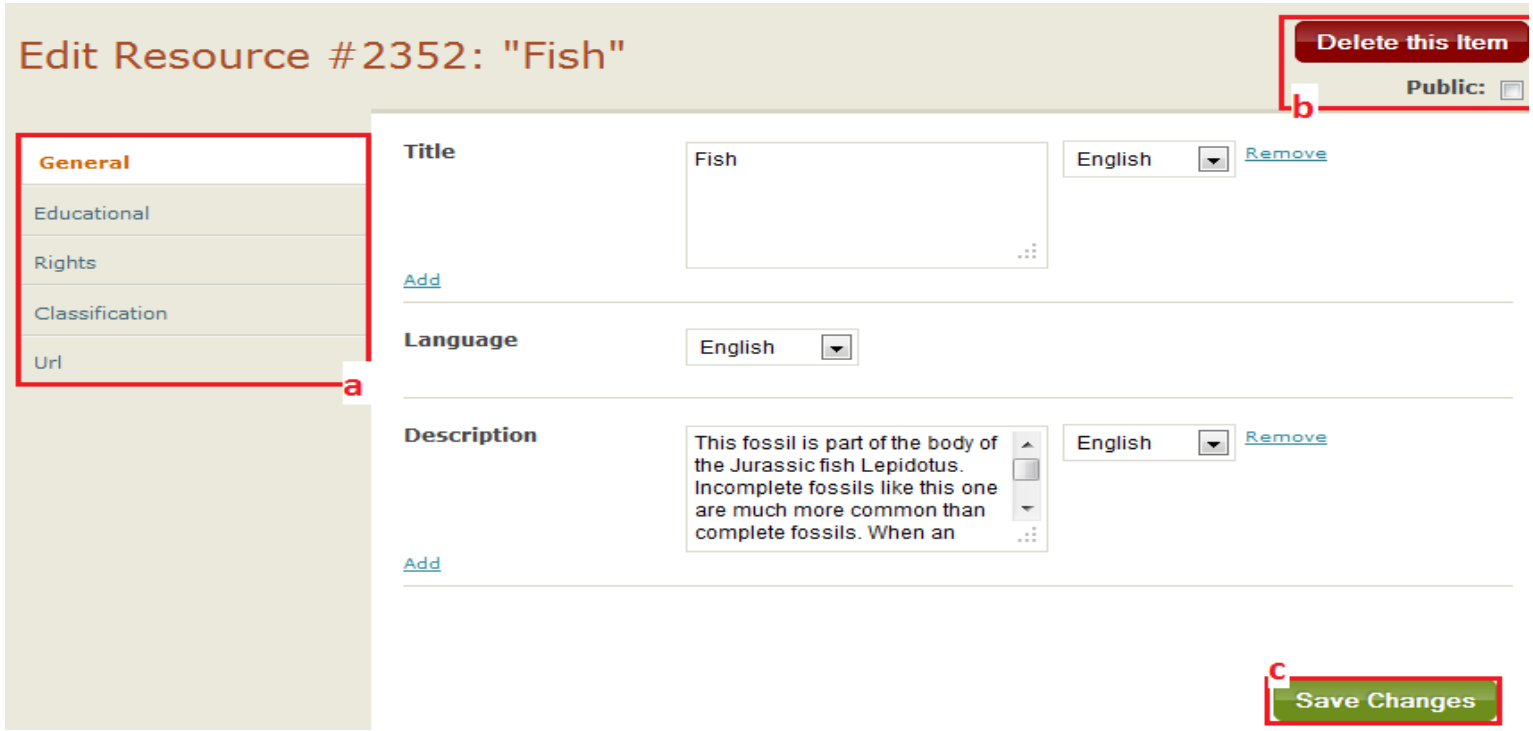

Figure 2.13: Edit the metadata of a Resource

2.4 Pathways

The **Pathways** area, accessible from either the Dashboard links or the toolbar, provides a list of the Pathways available on the site. To read more about each Pathway, click on the Title link. Logged in users can also **Add their own Pathway** (Figure 2.14 **Error! Reference source not found.**- area "a"). For step by step guidelines on how to create your own Pathway, go to chapter 3.11 *How to create a Pathway.*

Figure 2.14: Pathways

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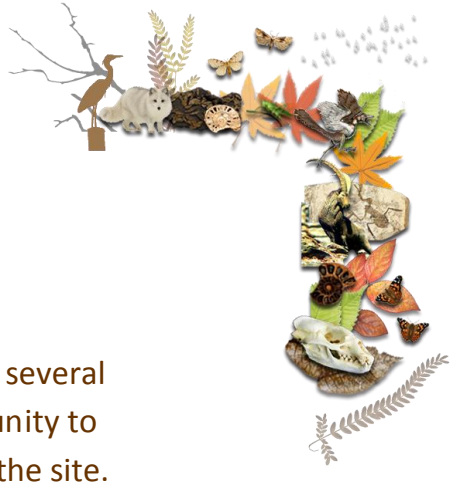

3 Design your Educational Pathway

Before starting to develop your own Educational Pathway using the Natural Europe Authoring Tool (http://education.natural-europe.eu) it is important to remember that an Educational Pathway consists of text, images and a number of educational resources. Moreover a Pathway is structured in several sections guiding you through the visit and teaching phases. The Authoring Tool gives you the opportunity to create your Pathway online and to upload your own resources, but also to use the ones available on the site. Resources can include images, videos, links, documents and presentations.

Therefore, before starting the creation of your Pathway, you might want to make sure that all the images and resources you plan to include in your Pathway are uploaded and available on the tool. This chapter will focus on how to Create a pathway.

3.1 How to create a Pathway

In order to create a Pathway on the Natural Europe Authoring Tool, follow the steps listed below:

- **Sign in** at http://education.natural-europe.eu for more info check section 2.1 *Sing In*
- Go to the **Pathways** tab and click on **Add Pathway** button (Figure 2.14–area "a") alternatively select **Create a pathway** from the Dashboard (Figure 2.3–area "b")**;**

3.1.1 Pathway Sections

- Complete one by one the **Pathway Sections: Introduction, Pre-visit Phase, Visit Phase and Post-visit Phase**

  - Each section consists of one or more pages corresponding to the teaching steps of an Educational Pathway. For each page, select **Edit** to start filling it in or **Save and return to Pathway** after you have completed all the pages.

- Introduction section consists of two (2) pages: *Guidance for Preparation*, *Connection with Curriculum.*

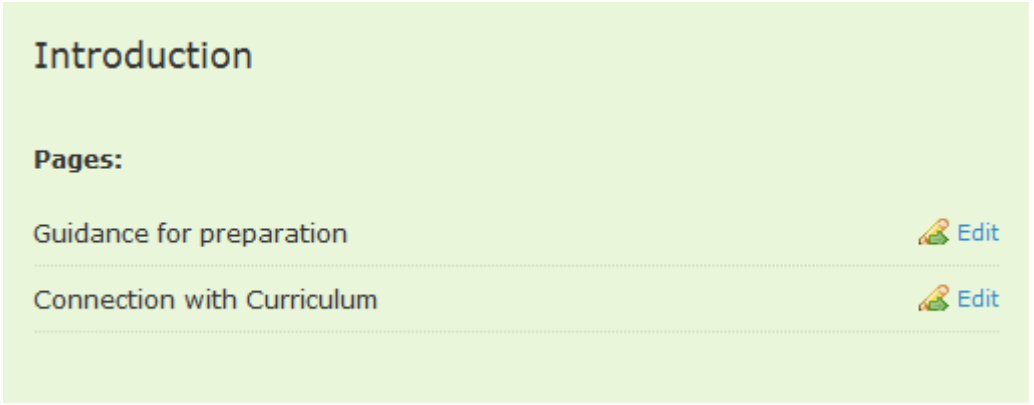

Figure 3.1: Introduction section

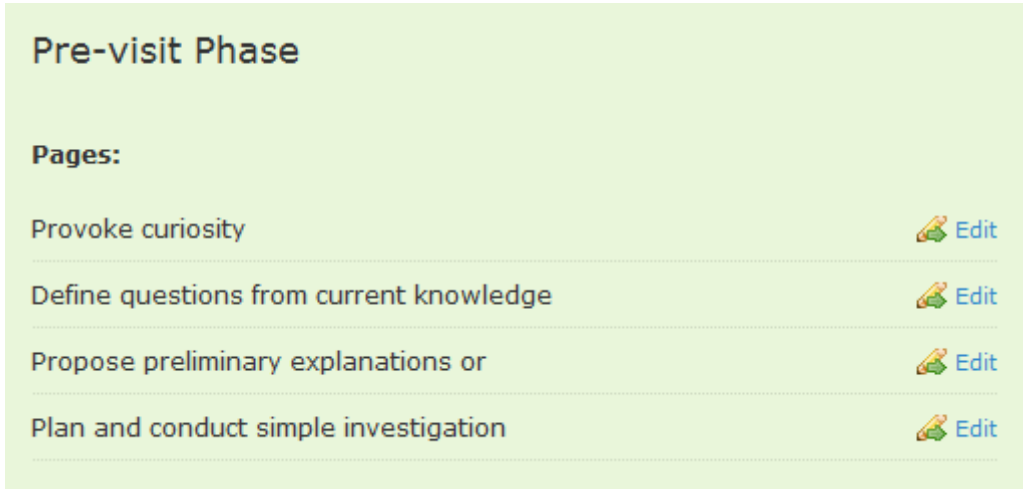

Figure 3.2: Pre-visit section

- Visit phase consists of three (3) pages: *Gather evidence from observation, Explanation based on evidence* and *Consider other explanations.*

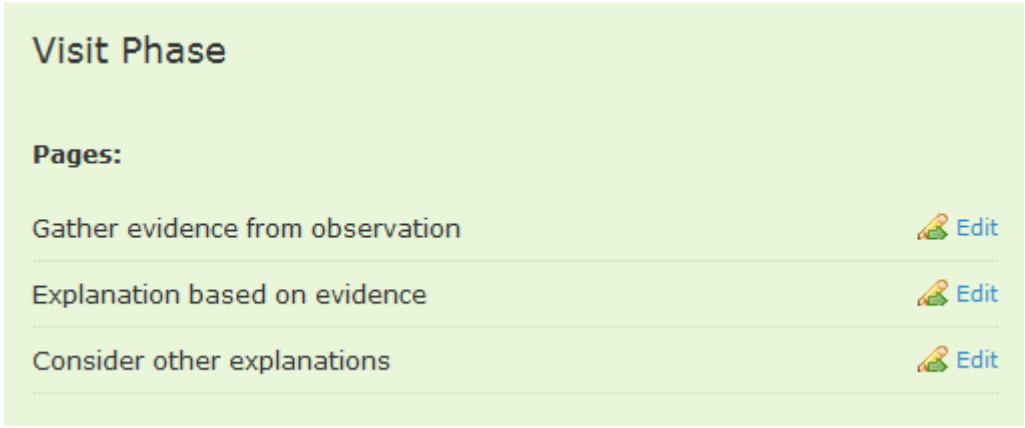

Figure 3.3: Visit phase

- **Post-visit phase** consists of three (3) pages as well: *Communicate explanation, Follow-up activities and materials* and *Sustainable contact.*

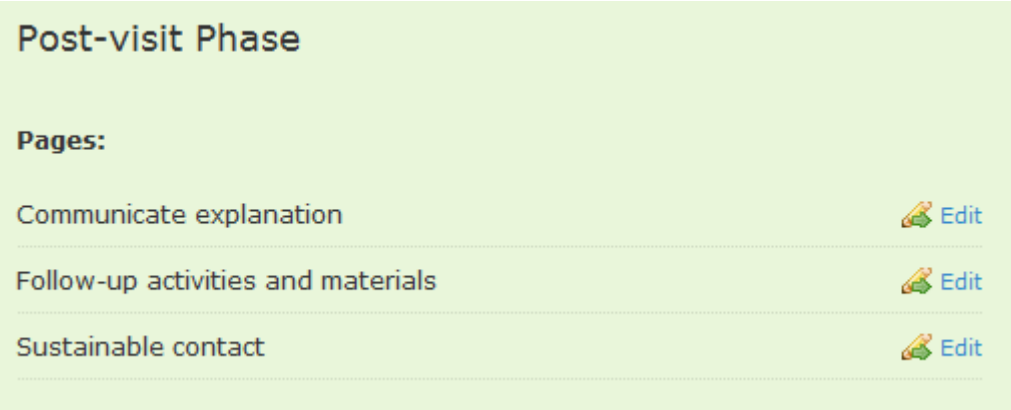

Figure 3.4: Post-visit phase

3.1.2 How to fill in a page

All the pages from the different sections of the pathway have an identical structure that allows you to insert text, images and connect supporting material and Europeana objects with just few clicks. Additionally, if you cannot find the resource that you are looking for, you can **Add a new resource.**

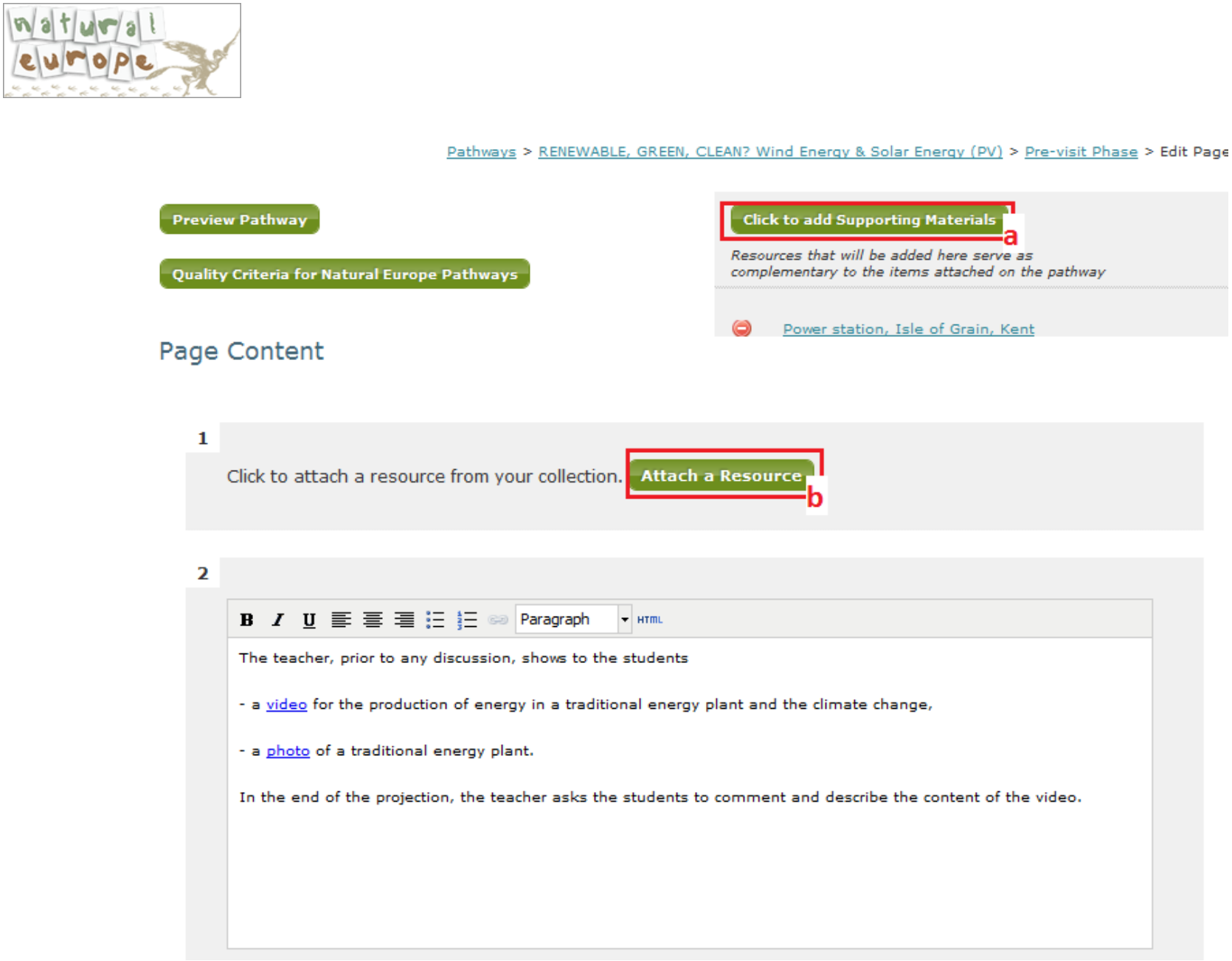

Figure 3.5: Page structure

- Start by filling in the page with **text**. Use the **Rich text editor** to format your text (up to 4 text-boxes).
- In each phase of the pathways the user can add an image as:
    - An attached item (see button "**Attach a Resource**" that is placed on the top of the text box in the main area of each page) (Figure 3.5 – area “b”)
    - **Supporting material** - either image, or page, or any link from the library (resources) that the user has in the Pathway Tool (using the button **add supporting material** on the upper right part of each page) (Figure 3.5 – area “a”)
    - **Link** within the text of each phase of the pathway (through the insert link button in the text editor)

The differences between the above are:

1. With the "attach" option you insert images that appear inside the pathway text (used as the main material of the pathway, the most important - up to 4 items)
2. With the "supporting material" you insert images and links, etc that appear in small thumbnails (preview) alongside the text of the pathway (used for material that complements the pathway).
3. Links provided in the text can only be links to external websites and not within the Natural Europe Pathway Authoring Tool

- **Add supporting materials** (Figure 3.5 – area “a”); Select an item or choose it from the list provided and click **Insert**. Please note that only public items will be listed in supporting materials. The item will be displayed in the **Supporting materials** section of the pathway page. If you want to remove a supporting material from the list click on the ⛔ icon.

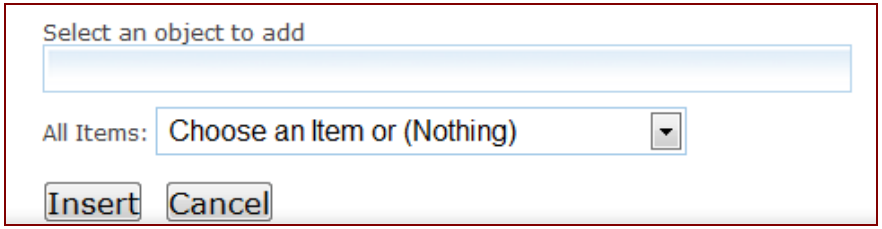

Figure 3.6: Select supporting material

- **Attach a Resource** (Figure 3.5 – area “b”) Select a resource from the list and then click “Attach Selected Item” (Figure 3.7 – area “b”).
- You can also search through the items (advance and basic search options)(Figure 3.7–area “a”).

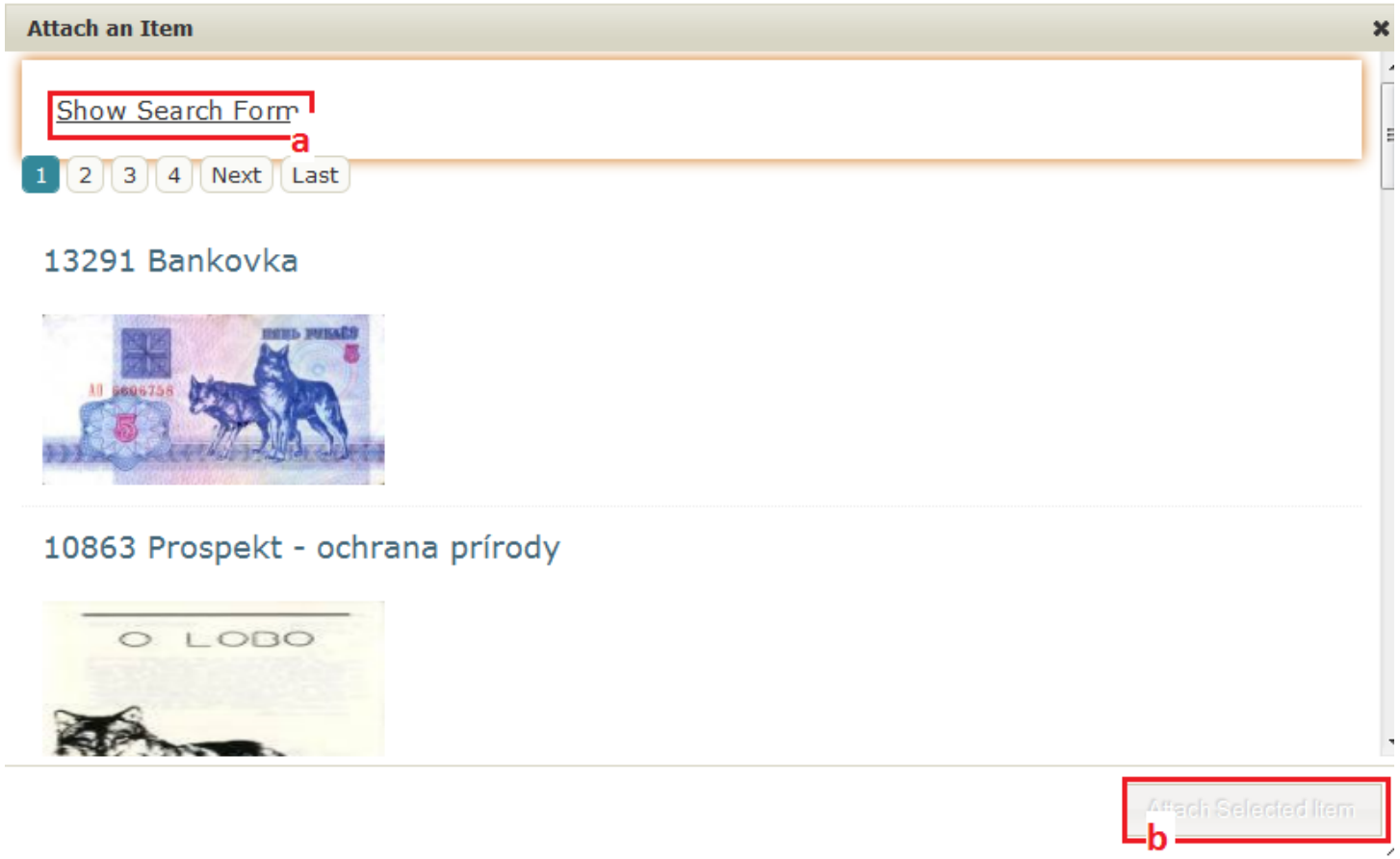

Figure 3.7: Attach a resource

- Select the Preview Pathway link to check how your Pathway will look like once published.

  - Select from the breadcrumb the section that you want, in order to edit only this section.

Figure 3.8: Edit page - Breadcrumb

- Select **Save** or **Save and return to pathway** to complete the other pages on the sections of the pathway.

Figure 3.9: Pathway page

3.1.3 Pathway Metadata

In order to describe your pathway, you have four (4) categories of metadata available: **General, Educational, Rights** and **Classification.**

Start by providing a **slug** for your pathway. The slug corresponds to the URL of the specific Pathway and should be unique.

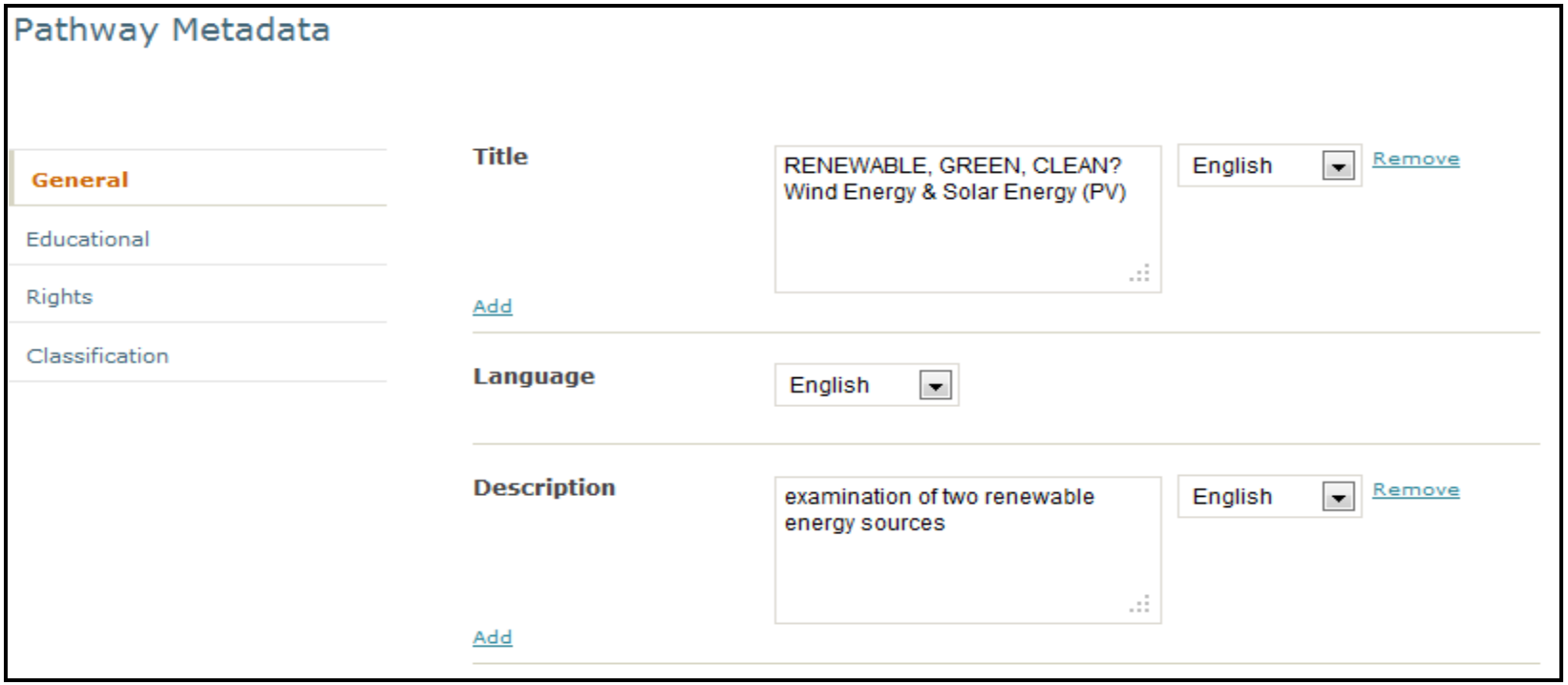

Figure 3.10: Add pathway - metadata

In the **General** section, you can provide the **Title** and **Language** of the pathway and add a **Description**.

The **Educational** section focuses on the **Resource type, Intended end user, Learning context** and **Typical Age range**.

Provide information about **Copyright** and other restrictions in the **Rights** section.

Finally fill in the **Classification** sections and **Save changes** or **Save and Finish** if you have finalized your pathway.

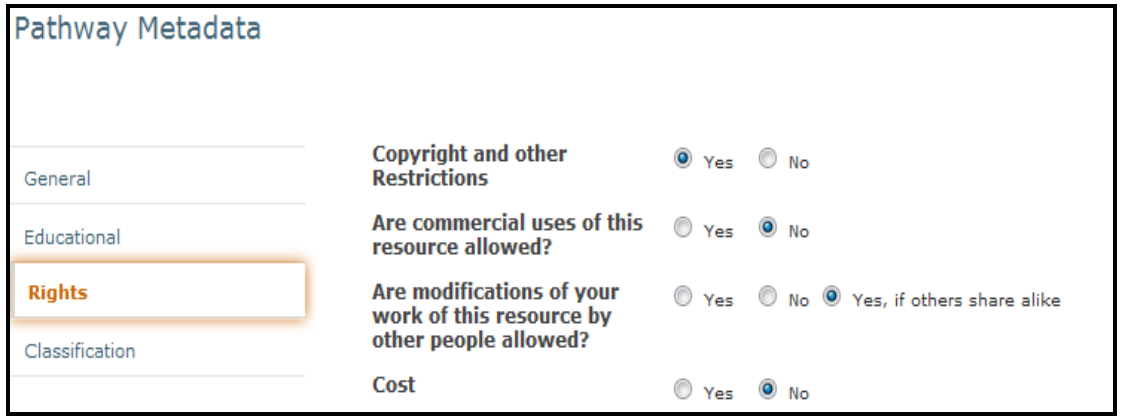

Figure 3.11: License your work

3.1.4 Licensing your Pathway

Your Educational Pathway should include a License in order to inform other users about the conditions under which you prefer to share your work.

To select a license, fill in the Rights section of Pathway Metadata.

Select your preferences from the fields provided in order to decide whether you prefer to allow commercial uses of your work, modifications and if the pathway is available freely or at a cost.

Once you provide this information, the tool will select the appropriate license (e.g. a Creative Commons license), and make it available on the main page of the pathway.

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4 Educational pathway - Step by Step Tutorial

Figure 4.1: Pathway starting point

EDIT MODE

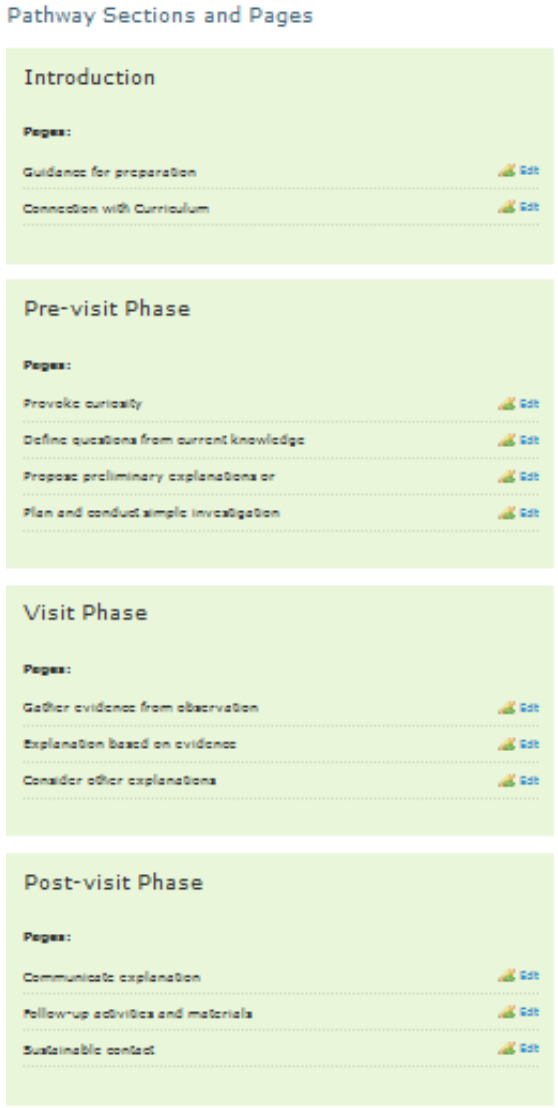

Figure 4.2: Pathway sections in Edit mode

VISIT MODE

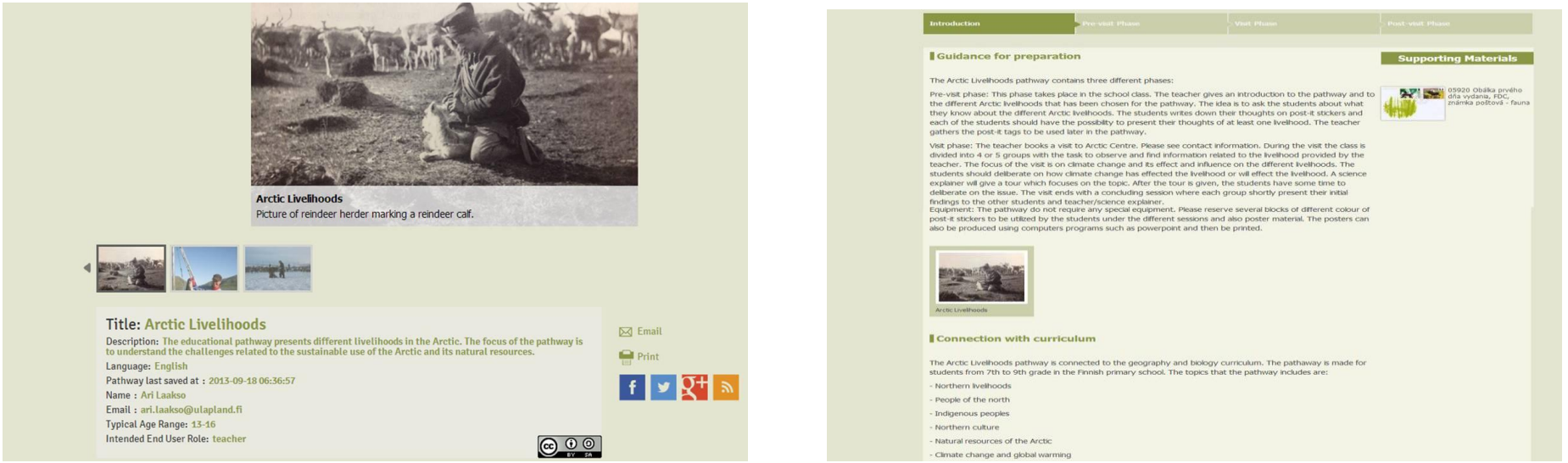

Figure 4.3: Pathway sections in Visit mode

EDIT MODE

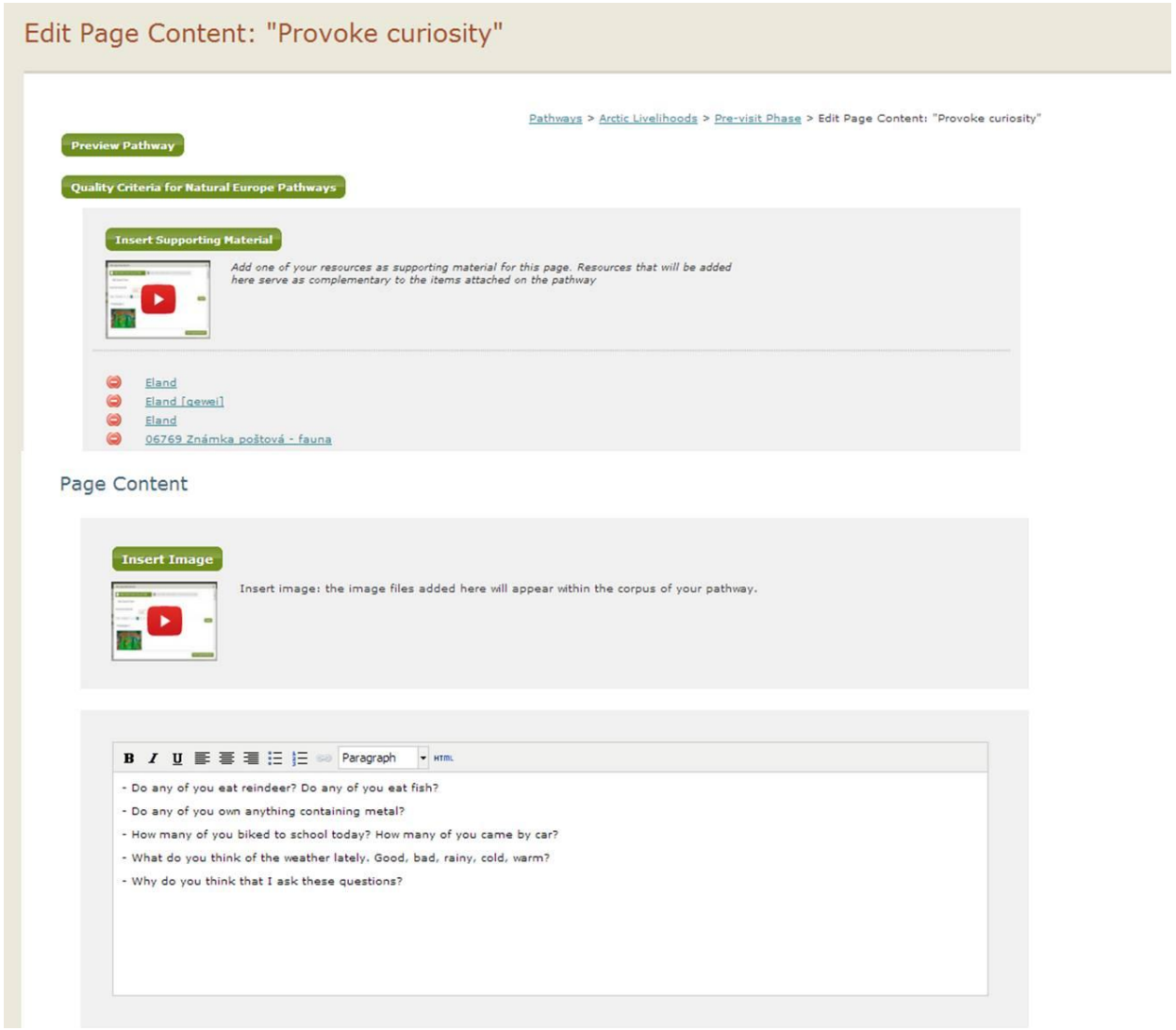

Figure 4.4: Pre-visit Phase in Edit mode

VISIT MODE

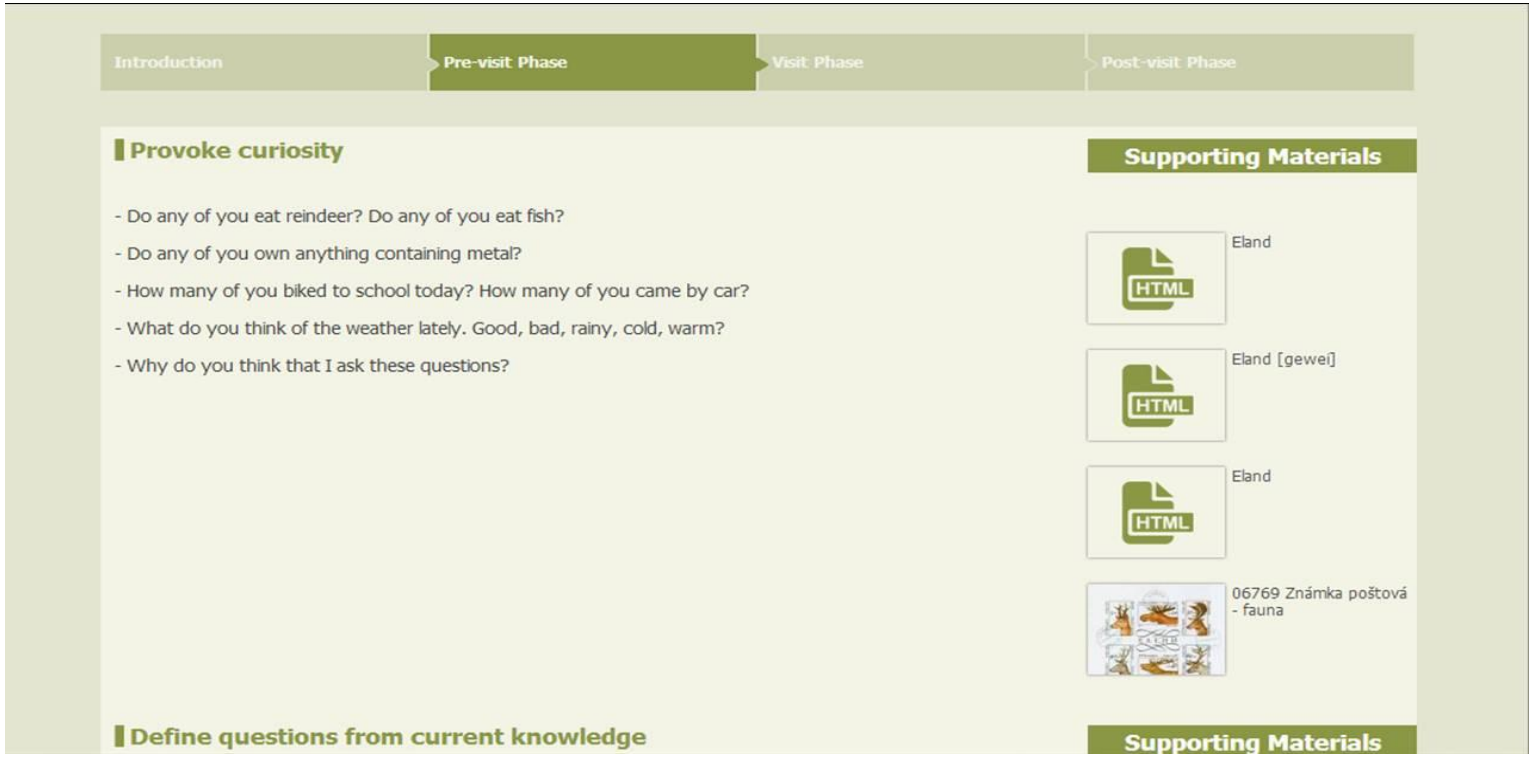

Figure 4.5: Pre-visit in Visit mode

EDIT MODE

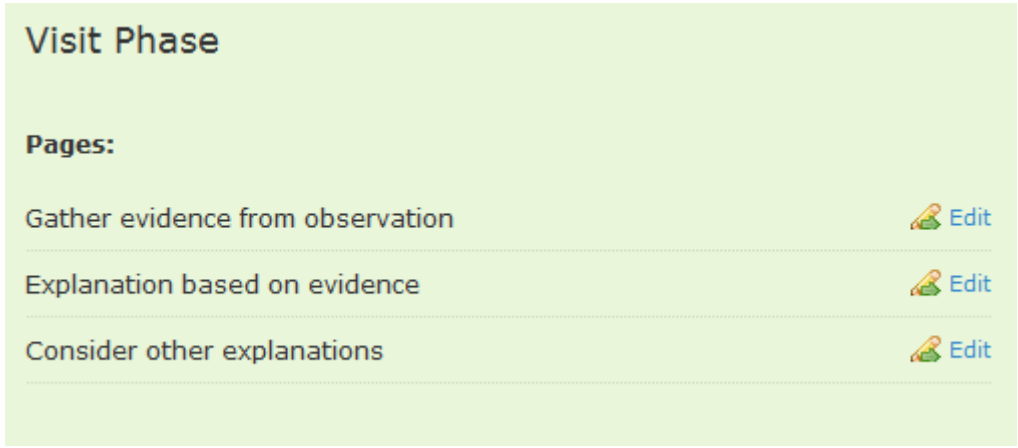

Figure 4.6: Visit pages in Edit mode

VISIT MODE

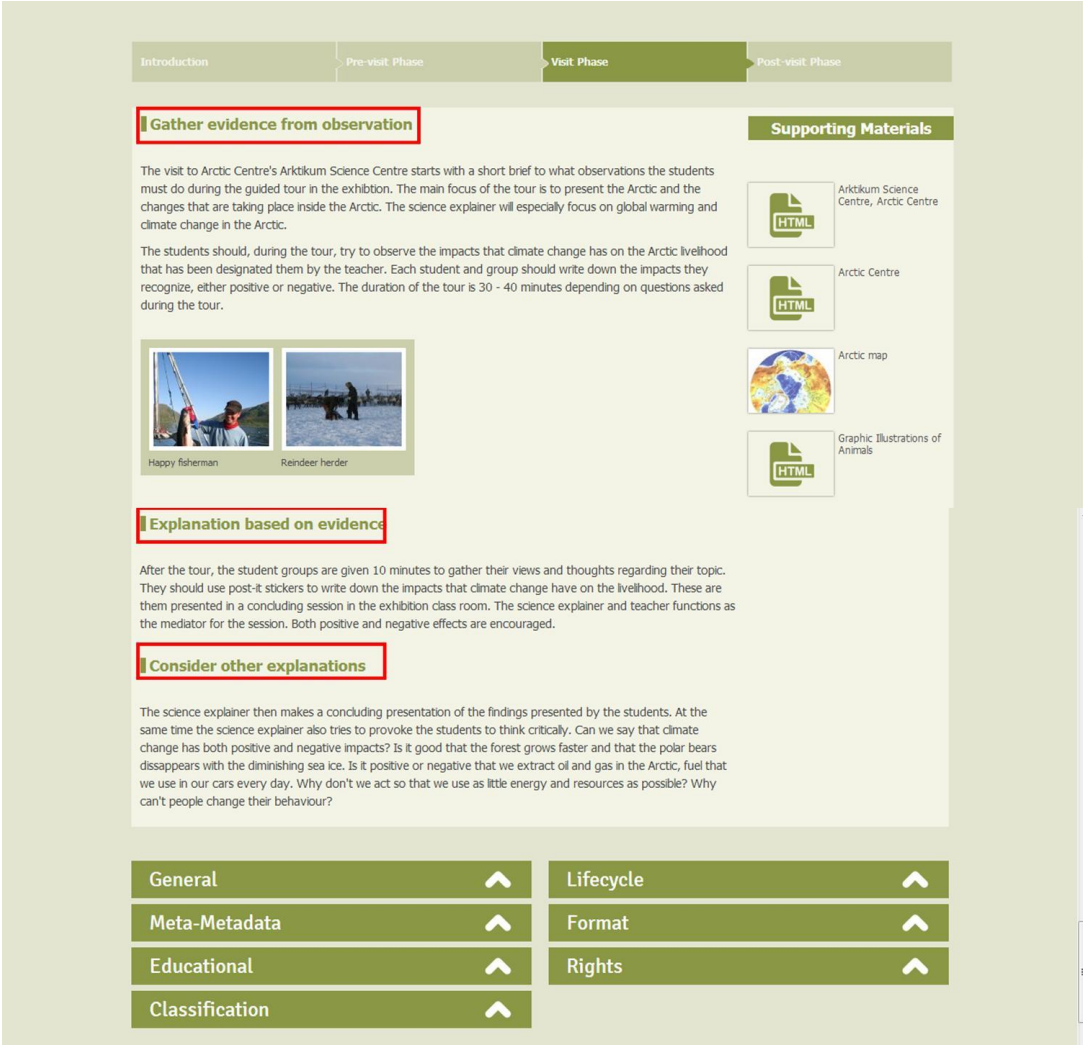

Figure 4.7: Visit pages in Visit mode

EDIT MODE

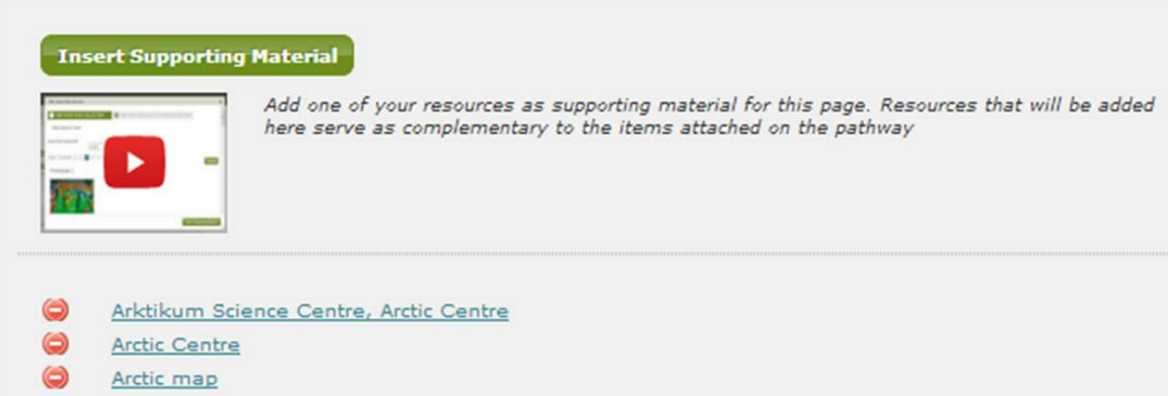

Figure 4.8: Insert Supporting Material in Edit mode

VISIT MODE

Figure 4.9: Supporting materials in Visit mode

EDIT MODE

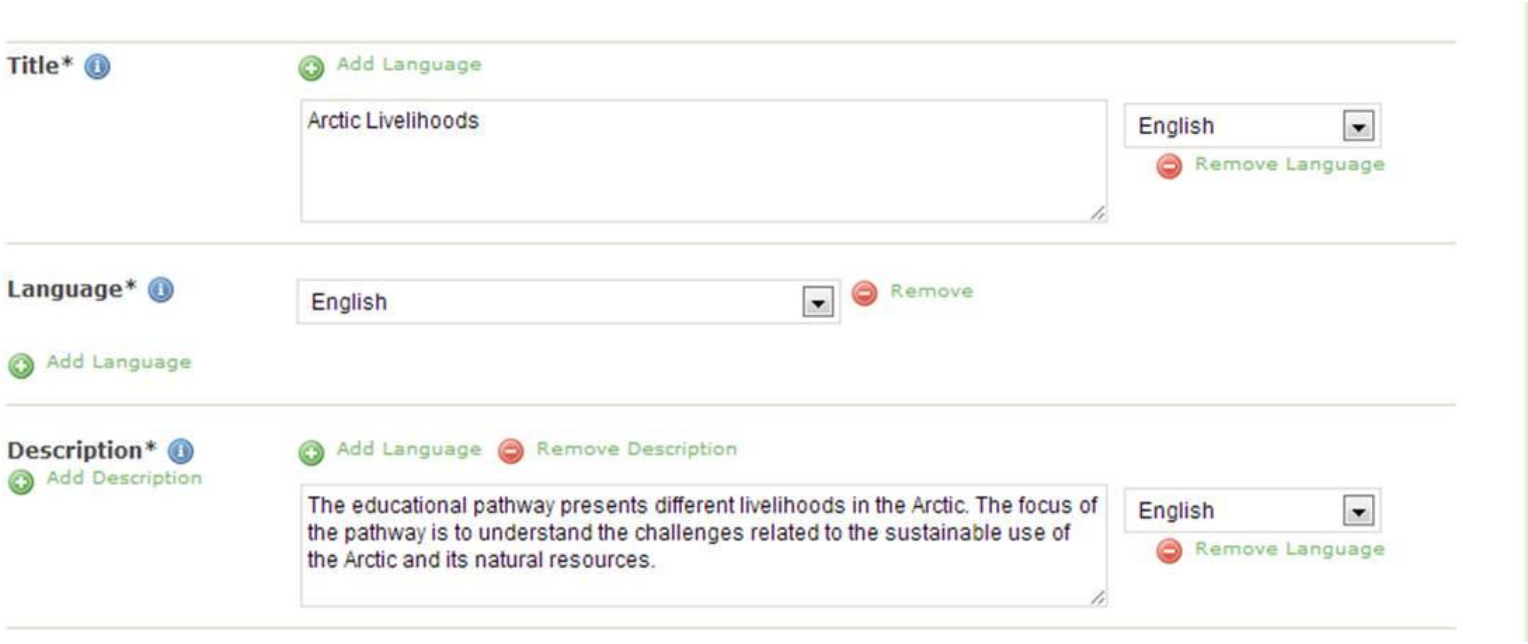

Figure 4.12: Metadata in Edit mode

VISIT MODE

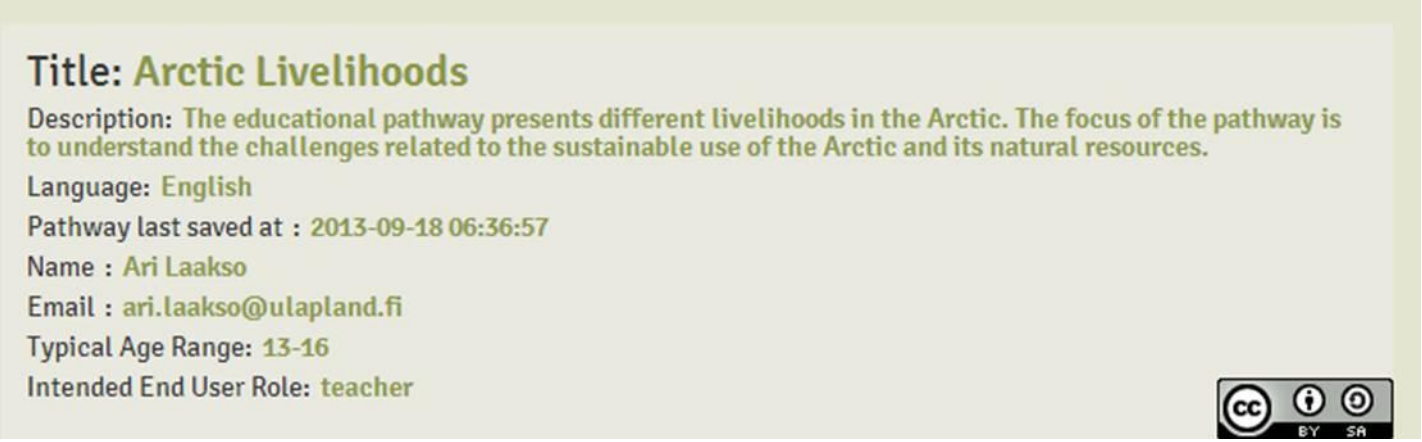

Figure 4.13: Metadata in Visit mode

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